Strategic Transportation Investments Implementation

FINAL REPORT

December 31, 2013

Executive Summary

In 2013 the North Carolina General Assembly (General Assembly) created the Strategic Transportation Investments Act (STI) to strengthen the state's economy and provide a new formula to direct construction funds through strategic transportation investments. Governor Pat McCrory signed the Act on June 26, 2013. The law required the North Carolina Department of Transportation (the Department) to submit a series of reports to the Joint Legislative Transportation Oversight Committee (JLTOC) and the Fiscal Research Division on August 15th, October 1st and a final report by January 1, 2014, on the Department's formulas that will be used in the prioritization process to rank highway and non-highway projects. The Department's Strategic Prioritization Office (SPOT), along with input from a key group of partners known as the Prioritization 3.0 (P3.0) Workgroup, developed the prioritization processes, criteria, and formulas for all modes of transportation. This final report includes the Department's Board of Transportation (BOT) approved scoring criteria, associated percent weights, formulas and a summary of both the process used by the Department to develop these recommendations and how these recommendations are being implemented as required by the STI.

On August 15th and October 1st, the Department submitted reports to the Joint Legislative Transportation Oversight Committee (JLTOC) and the Fiscal Research Division on the Department's recommended formulas that will be used in the prioritization process to rank highway and non-highway projects. These reports included statements on the process used by the Department to develop the criteria and formulas, including a listing of external partners consulted during this process, and including feedback from a group of key planning partners, known as the P3.0 Workgroup. The entire contents of the August 15th and October 1st reports are not included in this final report. However, a synopsis of differing recommendations (from what the Department previously submitted) is outlined in this report.

The October 1st report recommended a change in the local input point distribution from the August 15th report. The Department's August 15th recommendation was an equal distribution of local points between the Department's Division Engineers (DE's) and the Metropolitan and Rural Planning Organizations (MPOs/RPOs) in the Regional Impact and Division Needs categories. Following a presentation to the JLTOC on September 10th, the Department was asked to review this recommendation with the P3.0 Workgroup. As outlined in the October 1st report, the P3.0 Workgroup revisited this item and recommended the MPOs/RPOs have a greater share of the local point distribution for both the Regional Impact and Division Needs categories.

The BOT was made aware of the P3.0 Workgroup recommendations at its November 2013 meeting. The BOT considered those recommendations but believed an equal partnership and a more global view of meeting transportation needs of moving people and goods and connecting people and places necessitated an equal split in the local input distribution. The BOT believes the Division Engineers (DE's) will score projects based on an unbiased assessment of transportation needs in each local area and trusts the DE's to identify and

rate those high priority projects. Also, the cascading effect built into the STI enhances the ability for DE's to take a broader view of how to address transportation needs across all modes, individual planning organization boundaries and support the interests of the traveling public. Based on these views, the BOT approved an equal split in the local input point distribution between the MPOs/RPOs and Division Engineers. Thus, the approved local input distribution split is:

Regional Impact category: 15% Division Engineers; 15% MPO/RPO
Division Needs category: 25% Division Engineers; 25% MPO/RPO

The BOT did not make any other changes to the Department's recommended scoring criteria, weights and measures as outlined in the October 1st report. The final approved criteria are outlined in Section II and a summary table providing the detailed descriptive criteria is found in Appendix A.

The STI law also included provisions outlining how Transportation Division Engineers local input scoring will be accomplished. Specifically, public involvement, consideration of public comments and public hearings must be incorporated into the DE's process. The DE's have developed a comprehensive project solicitation and local input methodology for all transportation projects (highway, bicycle and pedestrian, public transportation, aviation, rail and ferry) within their respective areas that may compete for state funding within the Regional Impact and Division Needs categories. This solicitation and methodology is outlined in Appendix B.

Finally, the STI law requires the publication of the Department's recommended scoring criteria, formulas, resulting points and scores associated with projects and all other STI resources on a stand-alone webpage linked to the Department's main website. The link and a screenshot of the associated webpage are found in Appendix C.

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SECTION I. P3.0 WORKGROUP RECOMMENDATIONS

When House Bill 817 was introduced on April 11, 2013 the proposed legislation clearly outlined the use of the P3.0 Workgroup recommendations in implementing the prioritization process under the new law. Therefore the P3.0 Workgroup focused its efforts on reviewing their role and providing recommendations consistent with proposed requirements. In response to those requirements the P3.0 Workgroup meetings increased both in frequency (once per week) and in length (most meetings required full day commitments from workgroup members). This aggressive schedule and the constantly evolving bill proceedings led to the need to also expand the P3.0 Workgroup to ensure members were as up-to-date as possible on potential bill changes. Representatives of the Governor's Office, Department of Commerce, and NC Legislative staff (from the Senate, House, and the non-partisan Fiscal Research Division) were invited to participate as advisory members of the P3.0 Workgroup. The SPOT office facilitated the weekly meetings, provided agenda topics and presentations, and circulated summaries of each meeting. Due to the number of topics required to review under the draft requirements of the bill, many meetings resulted in lengthy discussions and a number of meetings extended beyond their scheduled end times. The long deliberations did not deter P3.0 Workgroup members from staying committed to the process. The August 15th and October 1st reports to the JLTOC outlined the roles and responsibilities of the P3.0 Workgroup.

The P3.0 Workgroup's recommendations to the Department regarding STI have been adopted by the Board of Transportation final approved criteria with two exceptions. Those exceptions are outlined below:

1. Local Input Methodology

As outlined in the Department's August 15th report, the P3.0 Workgroup recommended an equal distribution of local points between the Division Engineers (DE's) and the Metropolitan and Rural Planning Organizations (MPOs/RPOs) in the Regional Impact and Division Needs categories. Following the September 10th presentation to the JLTOC, the Department was asked to review this recommendation with the P3.0 Workgroup. Subsequently, a survey of the P3.0 Workgroup indicated there was some concern that the DE's were allowed to have too much share of the local input distribution. The concerns referenced the fact that the Department already has representation at a local level through the Technical Coordinating Committees and Technical Advisory Committee of the MPOs/RPOs and therefore has a vote on those committees. Others noted that an equal distribution indicated a true partnership with the MPOs/RPOs and the DE's provide a more global view of transportation needs that transcend individual geographic boundaries. The STI law specifies the local input share as 30% in the Regional Impact Category and 50% in the Division Needs Category. The P3.0 Workgroup revisited this item and at their September 23rd meeting reached consensus recommending the following percentage splits for local input scoring between MPOs/RPOs and NCDOT DE's:

Regional Impact category: 10% Division Engineers; 20% MPO/RPO
Division Needs category: 20% Division Engineers; 30% MPO/RPO

The BOT reviewed the P3.0 Workgroup's revised recommendations at their November 2013 meeting. The BOT concluded an equal partnership and a more global view of meeting transportation needs of moving people and goods and connecting people and places necessitated an equal split in the local input distribution. The BOT relies upon the Division

Engineers (DE's) to score projects based on an unbiased view of transportation needs in each local area and trusts the DE's to identify and rate those high priority projects. Also, the cascading effect built into the STI enhances the ability for DE's to take a broader view of how to address transportation needs across all modes, individual planning organization boundaries and support the interests of the traveling public. Based on these views, the BOT approved an equal split in the local input point distribution between the MPOs/RPOs and Division Engineers. Thus, the approved split is:

Regional Impact category: 15% Division Engineers; 15% MPO/RPO
Division Needs category: 25% Division Engineers; 25% MPO/RPO

2. Normalization minimums (90% highways, 4% non-highways).

As outlined in the August 15th report, the P3.0 Workgroup recommended to the Department to establish a minimum or floor for highway investment (90%) and non-highway investment (4%) to be applied to the combined funding available in both the Regional Impact and Division Needs categories. These minimums would not apply to the Statewide Mobility category. At the September 10th JLTOC meeting, members requested the Department staff revisit this item with the P3.0 Workgroup.

After further review, the P3.0 Workgroup reached consensus at their September 23rd meeting to clarify the programming application of the 4% minimum for non-highways to be applicable to the full funding under the STI law (i.e., across all three funding categories – Statewide Mobility, Regional Impact, and Division Needs).

The BOT reviewed and considered the impacts of this change recommended by the P3.0 Workgroup. Freight rail, aviation, and highway projects are eligible for funding in the Statewide Mobility category. If any freight rail or aviation project receives high scores and are programmed, their costs will count towards the 4% non-highway minimum approach advocated by the P3.0 Workgroup. Depending on the costs of these projects, the potential exists that fewer funds (and therefore fewer projects) would be available for non-highway investment in the Regional Impact and Division Needs categories. Also, applying the 4% minimum across the entire STI funding amount would equate to a sizable increase (up to $24 million more per year) in programming dollars required to be spent on non-highway projects. This could result in less flexibility for the Department's staff to program the highest scoring projects to where the needs are the greatest. Therefore, the BOT did not change their initial recommendations and their final approved criteria is outlined below:

<u>For Prioritization 3.0 Only (Initial Implementation of Strategic Transportation Investments)</u>

- Statewide Mobility (only) – No normalization, scores are stand-alone for comparison (highway, aviation, freight rail)
- Regional Impact & Division Needs – Allocate funds to Highway and Non-Highway modes based on minimum floor or percentages

Mode	NCDOT Recommendation	Historical Budgeted	Historical Expenditure
Highway	90% (minimum)	93%	96%
Non-Highway	4% (minimum)	7%	4%

Note: The Department will continue to research and seek recommendations on the topic of Normalization with national experts. The Department will also request the assistance of an outside agency to conduct a statistical analysis of project scores after all quantitative scores are completed in 2014. Any conclusive findings from this research and analysis will be incorporated into Prioritization 4.0.

SECTION II. DEPARTMENT'S FINAL APPROVED CRITERIA

The BOT approved the Department's final scoring criteria, weights, measures, normalization process and local input distribution at its November 7th, 2013 meeting. A brief description of those is listed below. A more detailed description of each criteria is found in Appendix A.

Board of Transportation - Prioritization 3.0 – November 7, 2013
Scoring Criteria, Weights, Normalization and Local Input Point Distribution for All Modes

Objective: The Board of Transportation approved the following criteria, weights and measures resulting from the Strategic Transportation Investments Law signed by Governor McCrory on June 26, 2013.

Highway Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Statewide Mobility	[Travel Time] Benefit/Cost = 30% Congestion = 30% Economic Competitiveness = 10% Safety = 10% Multimodal [& Freight + Military] = 20% **Total = 100%**	--	--
Regional Impact	[Travel Time] Benefit/Cost = 25% Congestion = 25% Accessibility/Connectivity = 10% Safety = 10% **Total = 70%**	**15%**	**15%**
Division Needs	[Travel Time] Benefit/Cost = 20% Congestion = 20% Safety = 10% **Total = 50%**	**25%**	**25%**

Note: NCDOT Divisions 1, 2, 3, 4 have approved different criteria and weights for their respective areas as follows:

Alternate Criteria for Divisions 1 & 4 - Prioritization 3.0

Highway Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Statewide Mobility	[Travel Time] Benefit/Cost = 30% Congestion = 30% Economic Competitiveness = 10% Safety = 10% Multimodal [& Freight + Military] = 20% **Total = 100%**	N/A	N/A
Regional Impact	[Travel Time] Benefit/Cost = 20% Congestion = 15% Safety = 15% Lane Width = 10% Shoulder Width = 10% **Total = 70%**	**15%**	**15%**
Division Needs	[Travel Time] Benefit/Cost = 10% Congestion = 10% Safety = 10% Lane Width = 10% Shoulder Width = 10% **Total = 50%**	**25%**	**25%**

Alternate Criteria for Divisions 2 & 3 - Prioritization 3.0

Highway Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Statewide Mobility	[Travel Time] Benefit/Cost = 30% Congestion = 30% Economic Competitiveness = 10% Safety = 10% Multimodal [& Freight + Military] = 20% **Total = 100%**	N/A	N/A
Regional Impact	[Travel Time] Benefit/Cost = 20% Safety = 25% Multimodal [& Freight + Military] = 25% **Total = 70%**	**15%**	**15%**
Division Needs	Congestion = 20% Safety = 20% Multimodal [& Freight + Military] = 10% **Total = 50%**	**25%**	**25%**

The non-highway mode scoring tables are as follows:

Aviation Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Statewide Mobility	NCDOA Project Rating = 40% FAA Airport Capital Improvement Plan = 40% Local Investment Index = 10% Federal Investment Index = 10% **Total = 100%**	--	--
Regional Impact	NCDOA Project Rating = 40% FAA Airport Capital Improvement Plan = 20% Local Investment Index = 5% Federal Investment Index = 5% **Total = 70%**	**15%**	**15%**
Division Needs	NCDOA Project Rating = 30% FAA Airport Capital Improvement Plan = 10% Local Investment Index = 5% Volume/Demand Index = 5% **Total = 50%**	**25%**	**25%**

Bicycle & Pedestrian Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Division Needs	Access = 10% Constructability = 5% Safety = 15% Demand Density = 10% Benefit/Cost = 10% **Total = 50%**	**25%**	**25%**

Ferry Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Regional Impact *(Note: all vessels are excluded from this category)*	Safety [Route Health Index] = 15% Benefit/Cost [Travel Time] = 15% Accessibility/Connectivity = 10% Asset Efficiency = 10% Capacity/Congestion = 20% **Total = 70%**	**15%**	**15%**
Division Needs	Safety [Route Health Index] = 15% Benefit/Cost [Travel Time] = 15% Accessibility/Connectivity = 10% Asset Efficiency = 10% **Total = 50%**	**25%**	**25%**

Public Transit Scoring (Expansion)

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Regional Impact	Benefit/Cost = 45% Vehicle Utilization Data = 5% System Safety = 5% Connectivity = 5% System Operational Efficiency = 10% **Total = 70%**	**15%**	**15%**
Division Needs	Benefit/Cost = 25% Vehicle Utilization Data = 5% System Safety = 5% Connectivity = 5% System Operational Efficiency = 10% **Total = 50%**	**25%**	**25%**

Public Transit Scoring (Facilities)

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Regional Impact	Age of Facility, Facility Demand, Park & Ride, Bus Shelter = 40% Benefit-Cost = 5% System Operational Efficiency = 5% Facility Capacity = 20% **Total = 70%**	**15%**	**15%**
Division Needs	Age of Facility, Facility Demand, Park & Ride, Bus Shelter = 30% Benefit-Cost = 5% System Operational Efficiency = 5% Facility Capacity = 10% **Total = 50%**	**25%**	**25%**

Public Transit Scoring (Fixed Guideway)

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Regional Impact	Mobility = 20% Cost Effectiveness = 15% Economic Development = 20% Congestion Relief = 15% **Total = 70%**	**15%**	**15%**
Division Needs	Mobility = 15% Cost Effectiveness = 15% Economic Development = 10% Congestion Relief = 10% **Total = 50%**	**25%**	**25%**

Rail Scoring (Track and Structures)

Funding Category				Local Input	
	Quantitative Data	Freight	Passenger	Division Rank	MPO/RPO Rank
Statewide Mobility (Class I Freight Only)	Benefit/Cost = Econ. Comp. = Capacity/Congestion = Safety = Accessibility = Connectivity = Mobility =	20% 10% 15% 15% 10% 10% 20% **Total = 100%**	--	--	--
Regional Impact (Freight & Passenger)	Benefit/Cost = Capacity/Congestion = Safety = Accessibility = Connectivity = Mobility =	10% 15% 15% 10% 5% 15% **Total = 70%**	10% 25% 15% -- -- 20% **Total = 70%**	**15%**	**15%**
Division Needs (Freight & Passenger)	Benefit/Cost = Capacity/Congestion = Safety = Accessibility = Connectivity = Mobility =	10% 10% 10% 5% 5% 10% **Total = 50%**	10% 15% 10% -- -- 15% **Total = 50%**	**25%**	**25%**

Rail Scoring (Freight Intermodal Facilities / Intercity Passenger Service & Stations)

Funding Category				Local Input	
	Quantitative Data	Freight	Passenger	Division Rank	MPO/RPO Rank
Regional Impact (Intercity Passenger Service Only)	Benefit/Cost = Capacity/Congestion = Connectivity = Mobility =	---- -- --	15% 25% 10% 20% **Total = 70%**	**15%**	**15%**
Division Needs (Facilities/ Intercity Passenger Service & Stations)	Benefit/Cost = Capacity/Congestion = Connectivity = Mobility =	10% 15% 10% 15% Total = 50%	10% 15% 10% 15% Total = 50%	**25%**	**25%**

Normalization –BOT Approval

Prioritization 3.0 Only (Initial Implementation of Strategic Transportation Investments)

- Statewide Mobility (only) – No normalization, scores are stand-alone for comparison (highway, aviation, freight rail)
- Regional Impact & Division Needs – Allocate funds to Highway and Non-Highway modes based on minimum floor or percentages

Mode	Board of Transportation Recommendation	Historical Budgeted	Historical Expenditures
Highway	**90% (minimum)**	93%	96%
Non-Highway	**4% (minimum)**	7%	4%

Note: The Department will continue to research and seek recommendations on the topic of Normalization with national experts. The Department will also request the assistance of an outside agency to conduct a statistical analysis of project scores after all quantitative scores are completed in 2014. Any conclusive findings from this research and analysis will be incorporated into Prioritization 4.0.

SECTION III. NORMALIZATION AND PROGRAMMING

Normalization describes the process of evaluating and comparing project scores from one transportation mode to another. In the P3.0 process, each mode uses different quantitative scoring criteria, different measures for those criteria and then assigns different weights to those criteria. The result is a variety of quantitative scores that are generated. Therefore, a methodology must be developed to effectively compare the value of projects in one mode against the value of project scores in another mode. Since more than one mode can

compete for the same funding, a normalization methodology is needed to help determine which projects move from prioritization to programming.

Lengthy discussions within the workgroup and research provided by the SPOT office resulted in several options for normalization. One option was to have no normalization, i.e., each project score (regardless of mode) would stand on its own with one score compared directly against another score. However, the basis for comparison would be weak due to the fact that different modes use different scoring criteria, weights and measures. Another option was to review a group of the top projects from each mode and conduct a benefit-cost analysis to essentially arrive at a comparison between modes. This was rejected by the P3.0 workgroup due to an over-reliance on a single criteria and the inconsistency produced based on the requirements of the proposed projects. Another option was to conduct a statistical analysis of the scores within each mode and then conduct a "normalization" procedure between modes based on accepted statistical analysis practice. This option showed the most promise. However, for the analysis to be statistically valid, the entire set of project scores in each mode would need to be available. Due to the pending submittal of new projects in early 2014, this option could not be applied. The workgroup however did reach consensus that a statistical analysis approach be considered for use in the next generation of Prioritization (P4.0).

Another option presented to the workgroup was to use an interim solution for P3.0. The Department reviewed historic spending of highway and non-highway modes. The data was reported from the financial office of the Department. Table 1 below indicates the percentage of recent historical construction dollars budgeted for highways and non-highways. Table 1 also indicates the percent of dollars actually expended (compared to the budget amount) for highway and non-highway projects.

Table 1

Mode	Proposed Minimums for Regional Impact and Division Needs Categories	Historical Budgeted	Historical Expenditures
Highway	90% (minimum)	93%	96%
Non-Highway	4% (minimum)	7%	4%

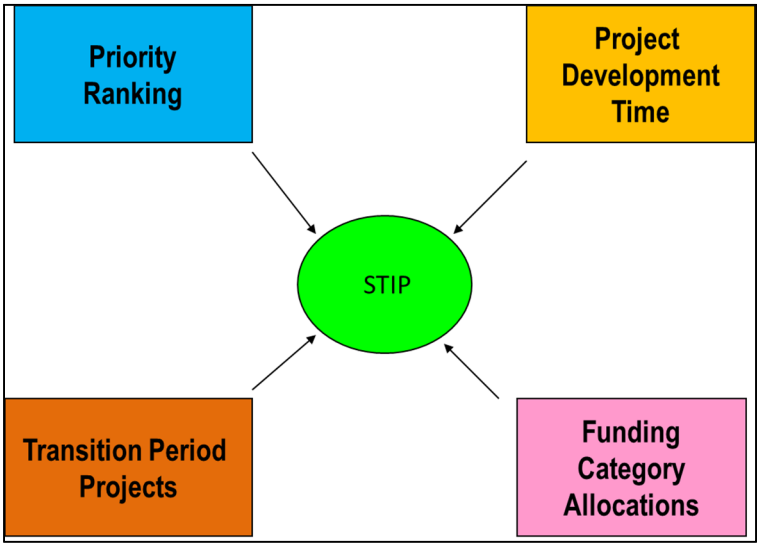
The differences between budget and expenditure amounts are the result of varying rates of project delivery success, and the Department's "cash flow" management process. These numbers are not likely to be the same over any period of time however this past historical spending pattern does provide an indicator for how funding percentages could be used in the future. This information provided the context for the P3.0 Workgroup to propose the following interim solution - no normalization would be used in the Statewide Mobility category since so few modes compete for those funds. Therefore, the quantitative scores (compared against each other) and funds available would form the basis for programming projects from this category.

However, a minimum percentage of funding (or floor) will guide the programming process in the combined Regional Impact and Division Needs categories. As reflected in Table 1 the anticipated funding for the highway mode will be a minimum of 90% of the combined programmed funds for the Regional Impact and Division Needs categories. The anticipated combined funding for these same two categories for non-highway modes will be a minimum of 4%.

This interim solution for P3.0 includes the expectation that the Department will pursue an independent consultant to review and provide recommendations on a normalization procedure later in 2014 and in preparation for P4.0. The BOT approved this initial normalization solution on November 7, 2013.

All available funds will be programmed. The results of the P3.0 process will govern the project priority. Over a 10-year time frame, funding will be provided to the highest scoring projects. However, as in the past, we will adjust the project schedule to fill early year "gaps" left by high scoring projects requiring extensive preconstruction work. A major factor in deciding when the top scoring projects are funded is the project development time (see Figure A). Projects need to fulfill a series of environmental and preliminary engineering requirements, right–of-way must be purchased, utility relocation (where applicable) must be addressed, and final plans must be developed for lettings. The time period to accomplish these activities can be lengthy. Construction funding cannot be allocated to projects before these preconstruction activities have taken place.

Figure A

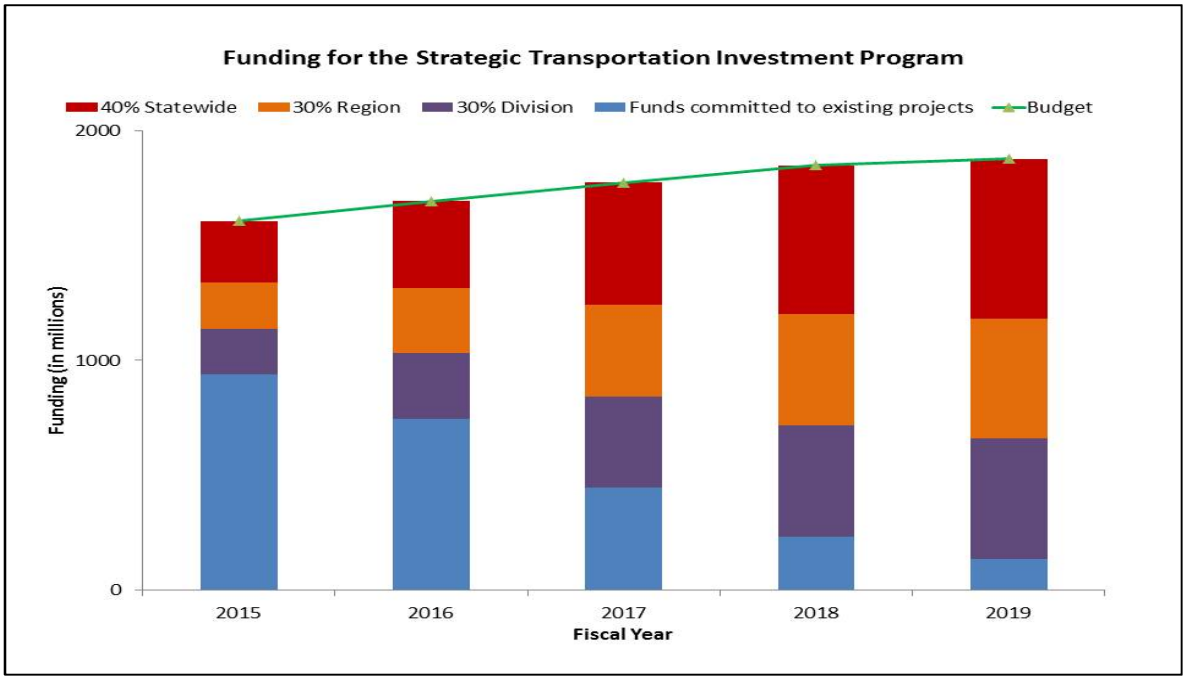


Funding constraints in state and federal statutes also direct that certain projects are only eligible for certain funding categories. Projects in these special categories need to be scheduled and their budget requirements accounted for in the appropriate STI category and year to achieve a fiscally constrained program. Finally (per the law) there are a select number of projects (Transition Period Projects) that are scheduled to be obligated for construction prior to July 1, 2015. The funding required for these projects need to be accounted for when budgeting for other projects.

The Department "cash flows" projects to advance its State Transportation Improvement Program (STIP). That is, major projects are not fully funded when let for construction. Instead these projects are budgeted for over 2 to 4 years to allow the funds allocated to a project to more closely match the expected payouts to contractors.

The Department closely monitors and projects cash needs for the future to ensure that there will be adequate future funds to meet these commitments. It is currently anticipated that over 50% of the funds anticipated to be available in fiscal years 2015-2016 will be spent paying for contracts let in prior years. The projects scheduled to be let by July 2015, will represent a significant commitment of future STI program dollars (see Figure B). These funds will be taken "off the top" and the remaining funds will be distributed under the 40% Statewide, 30% Regional, and 30% Division formula. This is a normal business practice and allows the Department to effectively manage their cash balances. New projects added will benefit from this practice, as the full cost of the project doesn't get added to the program – only the portion required to cover the designated period.

Figure B



The above factors will be considered when ensuring the minimum percentages for highway and non-highway modes will be met. Using the above constraints, the intended approach is to develop draft programming schedules by mode. The total programmed amounts by mode will be then be reviewed and compared to the minimum percentages. Since the number of submitted projects and costs far exceed anticipated budget it is not expected to be a concern about meeting the minimums outlined above.

One of the benefits the Department will realize from Session Law 2013-183 is the ability to align the federal and state required STIP with the five- and ten-year NCDOT Work Plan. While federal requirements only require a minimum of 4 years for a STIP, state requirements have driven the Department to use a seven-year time frame for the STIP. Under the STI the Department can make the federal STIP a five-year document and use the remaining 5 years (i.e., years 6-10) as the basis for a Developmental Work Plan. This sets up the Department to meet both state and federal statutory budget requirements for the first five years, and apply fiscal constraint targets to the second five-year period.

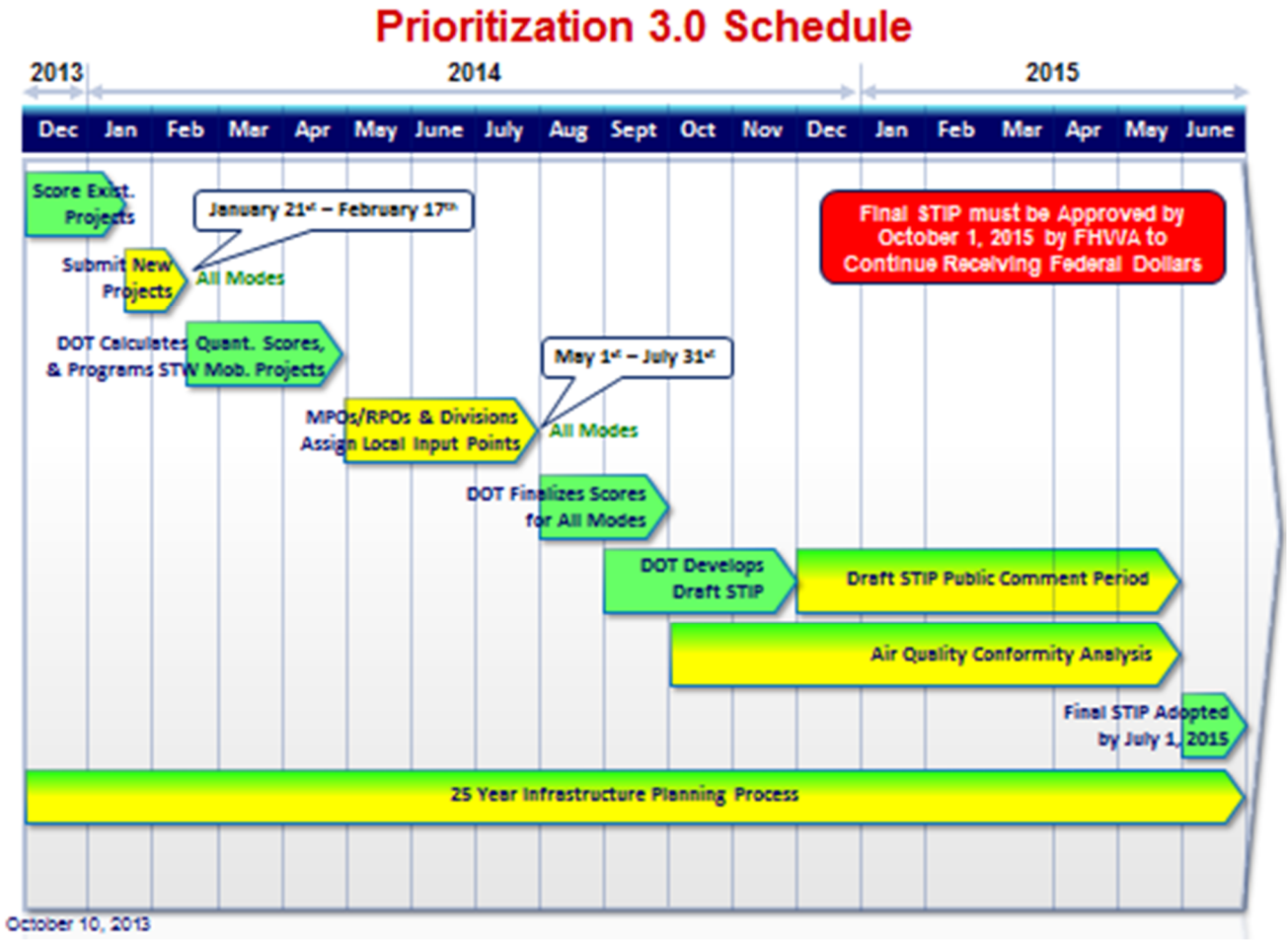
SECTION IV. P3.0 PRIORITIZATION SCHEDULE AND PRIORITIZATION 4.0

Figure C below outlines the timeline to implement P3.0. The Department will continue to coordinate between internal staff and key planning partners to meet the timelines established in the schedule. A series of technological enhancements are being implemented by the Department to streamline how projects are submitted, scored, and published both as input into the programming process and for public consumption.

The technical corrections bill contained provisions to improve the prioritization process. The Department has been directed to use the workgroup to develop these improvements and representation requirements were outlined. The Department will follow these requirements in assembling a P4.0 Workgroup.

Beginning on December 1, 2016, the Department will report annually to the JLTOC on any changes made to the prioritization process and resulting impact to the STIP.

Figure C



APPENDIX A

Prioritization 3.0
Detailed Description of Scoring Criteria, Weights, and Definitions for All Modes

Highway Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Statewide Mobility	**[Travel Time] Benefit/Cost = 30%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project to NCDOT **Congestion = 30%** • Comparison of the existing traffic volume to the existing capacity of the roadway (depending on data availability, Congestion may be measured by comparing congested travel speeds to uncongested speeds) **Economic Competitiveness = 10%** • Estimate of the number of long-term jobs and the % change in economic activity within the NCDOT Division the project is expected to provide over 30 years **Safety = 10%** • Evaluation of the number, severity, and frequency of crashes along the roadway **Multimodal [& Freight + Military] = 20%** • Measure of existing congestion along key military and truck routes, and routes that provide connections to transp. terminals **Total = 100%**	--	--
Regional Impact	**[Travel Time] Benefit/Cost = 25%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project to NCDOT **Congestion = 25%** • Comparison of the existing traffic volume to the existing capacity of the roadway (depending on data availability, Congestion may be measured by comparing congested travel speeds to uncongested speeds) **Accessibility/Connectivity = 10%** • Three component formula using commute times by census tracts, upgrade of travel function of roadway, and Department of Commerce County Tier designations **Safety = 10%** • Evaluation of the number, severity, and frequency of crashes along the roadway **Total = 70%**	**15%**	**15%**
Division Needs	**[Travel Time] Benefit/Cost = 20%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project to NCDOT **Congestion = 20%** • Comparison of the existing traffic volume to the existing capacity of the roadway **Safety = 10%** • Evaluation of the number, severity, and frequency of crashes along the roadway **Total = 50%**	**25%**	**25%**

Note: Divisions 1, 2, 3, 4 have approved different criteria and weights for their respective areas – see bottom of Appendix A.

Aviation Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Statewide Mobility	**NCDOA Project Rating = 40%** • Projects prioritized and classified within NC Division of Aviation (NCDOA) established project categories. Assigns point values based on priority of the project and need of the project **FAA Airport Capital Improvement Plan = 40%** • Federal Aviation Administration Airport Capital Improvement Plan (ACIP) Rating. Ratings based on critical airport development and capital needs within National Airspace System (NAS) **Local Investment Index = 10%** • A measurement of the project's local funds compared to state funds and provides greater points for projects that have a higher % of local funding sources (i.e. local or public-private funds) **Federal Investment Index = 10%** • A measurement of the project's federal funds compared to state funds and provides greater points for projects with higher % of federal funds verses state funds **Total = 100%**	--	--
Regional Impact	**NCDOA Project Rating = 40%** • Projects prioritized and classified within NC Division of Aviation (NCDOA) established project categories. Assigns point values based on priority of the project and need of the project **FAA Airport Capital Improvement Plan = 20%** • Federal Aviation Administration Airport Capital Improvement Plan (ACIP) Rating. Ratings based on critical airport development and capital needs within National Airspace System (NAS) **Local Investment Index = 5%** • A measurement of the project's local funds compared to state funds and provides greater points for projects that have a higher % of local funding sources (i.e. local or public-private funds) **Federal Investment Index = 5%** • A measurement of the project's federal funds compared to state funds and provides greater points for projects with higher % of federal funds verses state funds **Total = 70%**	**15%**	**15%**
Division Needs	**NCDOA Project Rating = 30%** • Projects prioritized and classified within NC Division of Aviation (NCDOA) established project categories. Assigns point values based on <u>priority</u> of the project and <u>need</u> of the project **FAA Airport Capital Improvement Plan = 10%** • Federal Aviation Administration Airport Capital Improvement Plan (ACIP) Rating **Local Investment Index = 5%** • A measurement of the project's local funds compared to state funds and provides greater points for projects that have a higher % of local funding sources (i.e. local or public-private funds) **Volume/Demand Index = 5%** • Index representing traffic (aircraft operations) plus employment density (jobs near the airport). Identifies projects where there is more traffic and in areas with more user demand **Total = 50%**	**25%**	**25%**

Bicycle & Pedestrian Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Division Needs	**Access = 10%** • This criterion measures community benefit as a result of constructing the proposed project, and is measured by the quantity and significance of destinations associated with the proposed project. Access benefit is also measured by the proximity of the proposed project to the most important end destination **Constructability = 5%** • This criterion measures the readiness of a project to be constructed in the near term. Factors such as secured right-of-way, environmental impact, and preliminary engineering work complete are used to calculate this score **Safety = 15%** • This criterion uses bicycle and pedestrian crash data and speed limit information along project corridors to determine the existing safety need **Demand Density = 10%** • This criterion measures user benefit as a result of constructing the proposed project, and it is measured by the density of population and employment within a walkable or bike-able distance of the proposed project **Benefit/Cost = 10%** • This criterion adds the Access and Demand scores together to create a combined benefit score, and then the benefit is divided into the cost of the project to NCDOT **Total = 50%**	**25%**	**25%**

Ferry Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Regional Impact *(Note: all vessels are excluded from this category)*	**Safety [Route Health Index] = 15%** • The safety analysis of the ferry route based an Asset Health Index that is determined based on the condition ratings of the vessels and the ramps & gantries **Benefit/Cost [Travel Time] = 15%** • Travel time savings determined by comparing the travel hours saved by utilizing the various ferry routes instead of taking the shortest available alternative route **Accessibility/Connectivity = 10%** • A measurement of the accessibility and connectivity provided by the various routes based on the number of points of interest within travel radii of 10, 20, & 30 miles **Asset Efficiency = 10%** • An evaluation of the cost effectiveness of asset operations in respect to continued maintenance on an asset versus the replacement costs of the subject asset **Capacity/Congestion = 20%** • A measure of the capacity/congestion by an evaluation of the vehicles that are left behind each time a ferry vessel departs compared to the total numbers of vehicles carried by the route in a year **Total = 70%**	**15%**	**15%**
Division Needs	**Safety [Route Health Index] = 15%** • The safety analysis of the ferry route based an Asset Health Index that is determined based on the condition ratings of the vessels and the ramps & gantries **Benefit/Cost [Travel Time] = 15%** • Travel time savings determined by comparing the travel hours saved by utilizing the various ferry routes instead of taking the shortest available alternative route **Accessibility/Connectivity = 10%** • A measurement of the accessibility and connectivity provided by the various routes based on the number of points of interest within travel radii of 10, 20, & 30 miles **Asset Efficiency = 10%** • An evaluation of the cost effectiveness of asset operations in respect to continued maintenance on an asset versus the replacement costs of the subject asset **Total = 50%**	**25%**	**25%**

Public Transit Scoring (Expansion)

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Regional Impact	**Benefit/Cost = 45%** • Assesses the projected ridership for the life of the expansion vehicle relative to the cost of the vehicle to the state **Vehicle Utilization Data = 5%** • Examines how systems are maximizing current fleet **System Safety = 5%** • Compares system safety statistics to the national average **Connectivity = 5%** • Measures the connectivity of the proposed expansion of service to destinations (education, medical, employment, retail, other transfers) **System Operational Efficiency = 10%** • Compares the number of trips to revenue hours reported **Total = 70%**	**15%**	**15%**
Division Needs	**Benefit/Cost = 25%** • Assesses the projected ridership for the life of the expansion vehicle relative to the cost of the vehicle to the state **Vehicle Utilization Data = 5%** • Examines how systems are maximizing current fleet **System Safety = 5%** • Compares system safety statistics to the national average **Connectivity = 5%** • Measures the connectivity of the proposed expansion of service to vital destinations **System Operational Efficiency = 10%** • Compares the number of trips to revenue hours reported **Total = 50%**	**25%**	**25%**

Public Transit Scoring (Facilities)

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Regional Impact	**Age of Facility, Facility Demand, Park & Ride, Bus Shelter = 40%** • Age: examines the age of the facility compared to the useful life of the facility • Facility Demand: measures the demand for new or expanded maintenance and operations facilities • Park & Ride: compares utilization to cost to state to construct • Bus Shelter: examines current demand (boardings and alightings) at the proposed shelter location **Benefit-Cost = 5%** • Examines the benefit (trips) relative to the cost of the project to the state **System Operational Efficiency = 5%** • Compares the number of trips to revenue hours reported **Facility Capacity = 20%** • Identifies the need for additional capacity by comparing proposed capacity, current usage, and current capacity **Total = 70%**	**15%**	**15%**
Division Needs	**Age of Facility, Facility Demand, Park & Ride, Bus Shelter = 30%** • Age: examines the age of the facility compared to the useful life of the facility • Facility Demand: measures the demand for new or expanded maintenance and operations facilities • Park & Ride: compares utilization to cost to state to construct • Bus Shelter: examines current demand (boardings and alightings) at the proposed shelter location	**25%**	**25%**

	Benefit-Cost = 5% • Examines the benefit (trips) relative to the cost of the project to the state **System Operational Efficiency = 5%** • Compares the number of trips to revenue hours reported **Facility Capacity = 10%** • Identifies the need for additional capacity by comparing proposed capacity, current usage, and current capacity **Total = 50%**		

Public Transit Scoring (Fixed Guideway)

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Regional Impact	**Mobility = 20%** • Measures the project usage (annual trips) **Cost Effectiveness = 15%** • Measures the cost effectiveness of the project per trip over the life of the project **Economic Development = 20%** • Measures the new employment and population growth in the fixed guideway corridor over 20 years **Congestion Relief = 15%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project **Total = 70%**	**15%**	**15%**
Division Needs	**Mobility = 15%** • Measures the project usage (annual trips) **Cost Effectiveness = 15%** • Measures the cost effectiveness of the project per trip over the life of the project **Economic Development = 10%** • Measures the new employment and population growth in the fixed guideway corridor over 20 years **Congestion Relief = 10%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project **Total = 50%**	**25%**	**25%**

Rail Scoring (Track and Structures)

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Statewide Mobility (Class I Freight Only)	**Benefit/Cost = 20%** • Benefits associated with emissions savings, fuel savings, travel time savings divided by the project cost to the state **Economic Competitiveness = 10%** • High-level relative measure of the anticipated statewide benefits of project improvements in numbers of jobs **Capacity/Congestion = 15%** • Percentage that the existing track segment is over-capacity **Safety = 15%** • Crash potential for railroad/highway at-grade crossings **Accessibility = 10%** • Measures the potential for new or improved accessibility to rail service for industries by a freight rail project **Connectivity = 10%** • Values projects on strategic corridors, carrying military, ports, intermodal and transload traffic **Mobility = 20%** • Measures either the change in percentage of available capacity or travel time savings provided by project **Total = 100%**	--	--
Regional Impact (Freight / Passenger)	**Benefit/Cost = 10% (freight) / 10% (passenger)** • Benefits associated with emissions savings, fuel savings, travel time savings divided by the project cost to the state **Capacity/Congestion = 15% (freight) / 25% (passenger)** • Percentage that the existing track segment is over-capacity **Safety = 15% (freight) / 15% (passenger)** • Crash potential for railroad/highway at-grade crossings **Accessibility = 10% (freight only)** • Measures the potential for new or improved accessibility to rail service for industries by a freight rail project **Connectivity = 5% (freight only)** • Values projects on strategic corridors, carrying military, ports, intermodal and transload traffic **Mobility = 15% (freight) / 20% (passenger)** • Measures either the change in percentage of available capacity or travel time savings provided by project **Total = 70%**	**15%**	**15%**
Division Needs (Freight / Passenger)	**Benefit/Cost = 10% (freight) / 10% (passenger)** • Benefits associated with emissions savings, fuel savings, travel time savings divided by the project cost to the state **Capacity/Congestion = 10% (freight) / 15% (passenger)** • Percentage that the existing track segment is over-capacity **Safety = 10% (freight) / 10% (passenger)** • Crash potential for railroad/highway at-grade crossings **Accessibility = 5% (freight only)** • Measures the potential for new or improved accessibility to rail service for industries by a freight rail project **Connectivity = 5% (freight only)** • Values projects on strategic corridors, carrying military, ports, intermodal and transload traffic **Mobility = 10% (freight) / 15% (passenger)** • Measures either the change in percentage of available capacity or travel time savings provided by project **Total = 50%**	**25%**	**25%**

Rail Scoring (Freight Intermodal Facilities / Intercity Passenger Service & Stations)

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Regional Impact (Intercity Passenger Service Only)	**Benefit/Cost = 15%** • Benefits associated with emissions savings, fuel savings, travel time savings divided by the project cost to the state **Capacity/Congestion = 25%** • Percentage that the existing facility is over-capacity **Connectivity = 10%** • Values projects based on type and value of connections to intercity passenger service, commuter service, bus service and parking **Mobility = 20%** • Values daily volumes in relation to catchment area population **Total = 70%**	**15%**	**15%**
Division Needs (Facilities/ Intercity Passenger Service & Stations)	**Benefit/Cost = 10%** • Benefits associated with emissions savings, fuel savings, travel time savings divided by the project cost to the state **Capacity/Congestion = 15%** • Percentage that the existing facility is over-capacity **Connectivity = 10%** • Values passenger projects based on type and value of connections to intercity passenger service, commuter service, bus service and parking • Values projects serving military, port, intermodal and transload traffic and % of NC population in catchment area **Mobility = 15%** • Values daily volumes in relation to catchment area population **Total = 50%**	**25%**	**25%**

Alternate Criteria for Divisions 1 & 4 - Prioritization 3.0

Highway Scoring

Funding Category	Quantitative Data	Local Input	
		Division Rank	MPO/RPO Rank
Statewide Mobility	**[Travel Time] Benefit/Cost = 30%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project to NCDOT. *Toll revenues anticipated from a project will reduce the cost to NCDOT and therefore increase the score in this criteria*. **Congestion = 30%** • Comparison of the existing traffic volume to the existing capacity of the roadway (depending on data availability, Congestion may be measured by comparing congested travel speeds to uncongested speeds) **Economic Competitiveness = 10%** • Estimate of the number of long-term jobs and the % change in economic activity within the NCDOT Division the project is expected to provide over 30 years **Safety = 10%** • Evaluation of the number, severity, and frequency of crashes along the roadway **Multimodal [& Freight + Military] = 20%** • Measure of existing congestion along key military and truck routes, and routes that provide connections to transportation terminals **Total = 100%**	N/A	N/A

Regional Impact	**[Travel Time] Benefit/Cost = 20%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project to NCDOT. *Toll revenues anticipated from a project will reduce the cost to NCDOT and therefore increase the score in this criteria* **Congestion = 15%** • Comparison of the existing traffic volume to the existing capacity of the roadway (depending on data availability, Congestion may be measured by comparing congested travel speeds to uncongested speeds) **Safety = 15%** • Evaluation of the number, severity, and frequency of crashes along the roadway **Lane Width = 10%** • Comparison of existing lane width to NCDOT Design standards. The greater the difference the higher the points awarded **Shoulder Width = 10%** • Comparison of existing paved shoulder width to NCDOT Design standards. The greater the difference the higher the points awarded **Total = 70%**	**15%**	**15%**
Division Needs	**[Travel Time] Benefit/Cost = 10%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project to NCDOT. *Toll revenues anticipated from a project will reduce the cost to NCDOT and therefore increase the score in this criteria* **Congestion = 10%** • Comparison of the existing traffic volume to the existing capacity of the roadway (depending on data availability, Congestion may be measured by comparing congested travel speeds to uncongested speeds) **Safety = 10%** • Evaluation of the number, severity, and frequency of crashes along the roadway **Lane Width = 10%** • Comparison of existing lane width to NCDOT Design standards. The greater the difference the higher the points awarded **Shoulder Width = 10%** • Comparison of existing paved shoulder width to NCDOT Design standards. The greater the difference the higher the points awarded **Total = 50%**	**25%**	**25%**

Alternate Criteria for Divisions 2 & 3 - Prioritization 3.0

Highway Scoring

Funding Category	**Quantitative Data**	**Local Input**	
		Division Rank	MPO/RPO Rank
Statewide Mobility	**[Travel Time] Benefit/Cost = 30%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project to NCDOT. *Toll revenues anticipated from a project will reduce the cost to NCDOT and therefore increase the score in this criteria* **Congestion = 30%** • Comparison of the existing traffic volume to the existing capacity of the roadway (depending on data availability, Congestion may be measured by comparing congested travel speeds to uncongested speeds) **Economic Competitiveness = 10%** • Estimate of the number of long-term jobs and the % change in economic activity within the NCDOT Division the project is expected to provide over 30 years **Safety = 10%** • Evaluation of the number, severity, and frequency of crashes along the roadway	N/A	N/A

	Multimodal [& Freight + Military] = 20% • Measure of existing congestion along key military and truck routes, and routes that provide connections to transportation terminals **Total = 100%**		
Regional Impact	**[Travel Time] Benefit/Cost = 20%** • Travel time savings the project is expected to provide over 30 years divided by the cost of the project to NCDOT. *Toll revenues anticipated from a project will reduce the cost to NCDOT and therefore increase the score in this criteria* **Safety = 25%** • Evaluation of the number, severity, and frequency of crashes along the roadway **Multimodal [& Freight + Military] = 25%** • Measure of existing congestion along key military and truck routes, and routes that provide connections to transportation terminals **Total = 70%**	**15%**	**15%**
Division Needs	**Congestion = 20%** • Comparison of the existing traffic volume to the existing capacity of the roadway (depending on data availability, Congestion may be measured by comparing congested travel speeds to uncongested speeds) **Safety = 20%** • Evaluation of the number, severity, and frequency of crashes along the roadway **Multimodal [& Freight + Military] = 10%** • Measure of existing congestion along key military and truck routes, and routes that provide connections to transportation terminals **Total = 50%**	**25%**	**25%**

APPENDIX B

NCDOT Division Engineer Project Solicitation and Local Input Scoring Methodology Methodology

Introduction

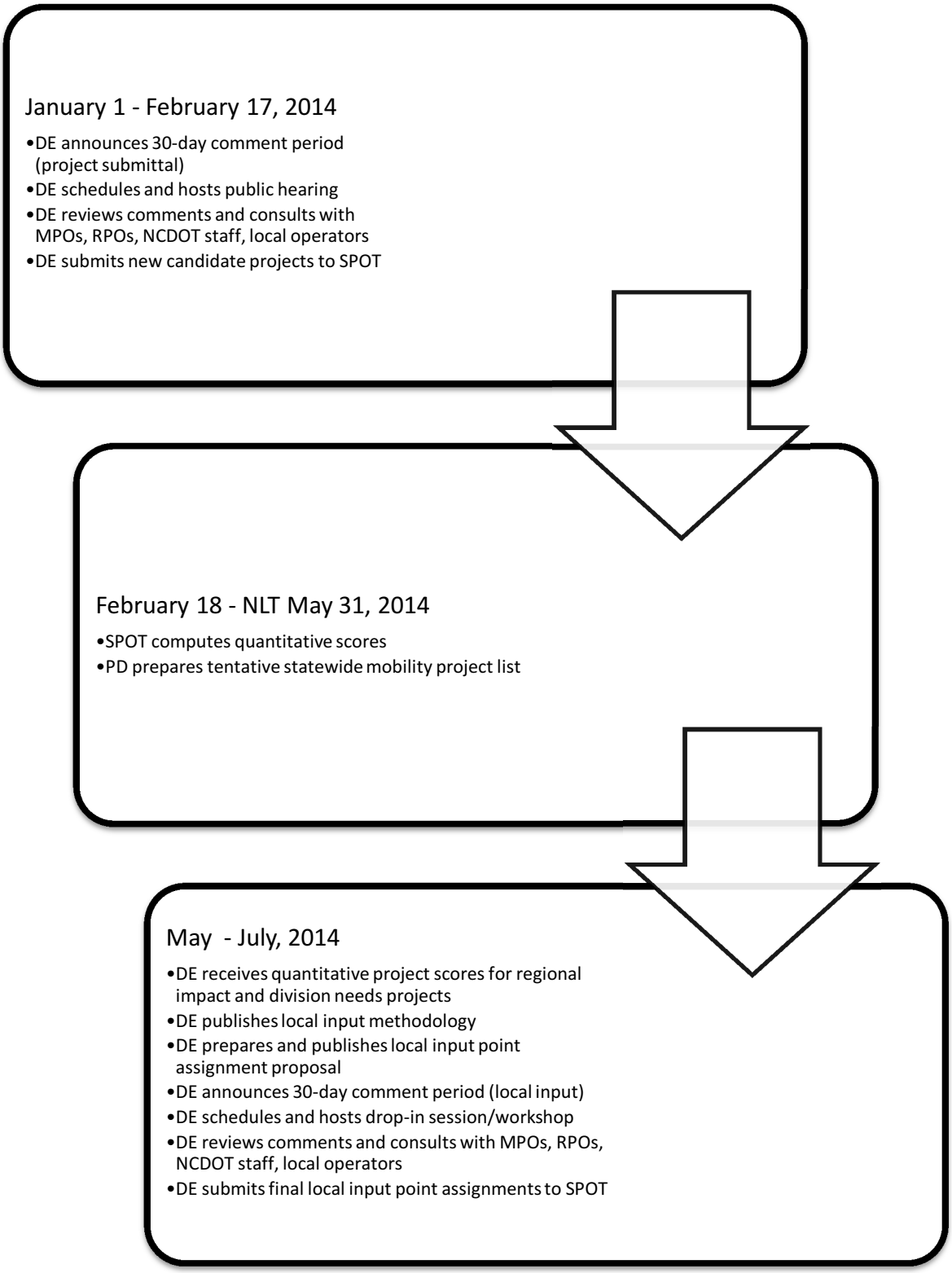
The NCDOT Division Engineers are required by STI legislation to develop a local input methodology for all transportation projects (highway, bike and pedestrian, public transportation, aviation, rail and ferry) within their respective areas that may compete for state funding. In conjunction with our continuous, cooperative and comprehensive planning relationship with local Metropolitan Planning Organizations (MPOs) and Rural Planning Organizations (RPOs), NCDOT Division Engineers have developed the following project solicitation process and local input methodology.

Applicability

The project solicitation process will apply to all projects submitted by the Division Engineer, and the local input methodology will apply to all projects (regional impact and division needs) to be ranked by the Division Engineer within their geographic boundaries (and adjacent boundaries if a given project spans more than one Division).

Subject to Secretary of Transportation approval and Board of Transportation review.

Schedule Overview



Schedule Details

Project Solicitation:

Each transportation Division will solicit candidate projects for 30 days prior to the February 17th, 2014 project submittal deadline. **The results of this process will be reviewed with each of the MPOs and RPOs in the Division, appropriate NCDOT Transit Division (all modes) staff, and local aviation, rail and public transit operators prior to submitting new candidate projects.** Project suggestions received will be shared and coordinated with the respective MPO and/or RPO in each Division and with appropriate NCDOT transit division staff to avoid duplication and ensure maximum number of project submittals per Division is not exceeded. The Division will then submit the selected project list using NCDOT's SPOT Online tool (web based system) for quantitative scoring no later than February 17th, 2014.

Project Ranking:

The Division Engineer will evaluate the full list of new and previously evaluated projects for the Division between May and July 2014 assigning local input points in consultation with the MPOs and RPOs in the division, and appropriate NCDOT Transit Division (all modes) staff for submission to the Strategic Prioritization Office of Transportation (SPOT) by July 31st, 2014.

Public Input Process

Project Solicitation:

Each Division Engineer's office will announce the 30 day project solicitation period to all governments, MPOs, RPOs, NCDOT staff, local airport, rail and transit operators, and interested persons in the Division's geographic boundaries using methods approved by the NCDOT Communications Office. In addition, each Division will host public hearings at a central location within each Division during the 30 day project solicitation period. Information regarding the public hearing, and specific methods for providing input (email, phone, mail, etc.), will be advertised to stakeholders using methods approved by the NCDOT Communications Office. Comments received via public hearings and other methods approved by the NCDOT Communications Office will be posted to the NCDOT website. **The results of the 30 day project solicitation period and the public input received will be reviewed by the Division Engineer in consultation with the MPOs and RPOs in the Division, appropriate NCDOT transit division staff, and local aviation, rail and transit operators.** Through this collaboration, the Division Engineer will determine the list of candidate projects to submit for technical evaluation, while avoiding duplicate project submissions and ensuring the maximum number of project submittals is not exceeded. The Division Engineer will be able to submit new transportation projects (across all modes) based upon the P3.0 Workgroup and Department's agreed upon allowances.

Project Ranking:

The Division Engineer will receive the quantitative scores for the projects eligible for local input points in May of 2014. The Division Engineer will be responsible for assigning local input points to regional impact and division needs projects for their area (statewide mobility projects will be evaluated based solely on their technical scores). The Division Engineer will publish his/her local input methodology which will be used as the basis to assign preliminary points to all regional impact and division needs projects within their division and/or adjacent divisions using methods approved by the NCDOT Communications Office. Each Division Engineer's office will then announce a 30 day comment period to solicit input on this information and provide specific methods for providing input (email, phone, mail, etc.) as approved by the NCDOT Communications Office. The 30 day comment period will vary by Division, and will take place during the 90 day window (May 1-July 31, 2014) for assigning local input points. During this period, each Division will host public drop-in/workshop sessions at a central location within each Division prior to the final assignment of local input points by July 31, 2014. Advertisement soliciting input during the 30 day comment period, and for the drop-in/workshop sessions, will be made to the public, and to MPOs, RPOs, NCDOT staff, local airport, rail and transit operators, and interested persons in the Division's geographic boundaries using methods approved by the NCDOT Communications Office.

The Division Engineer will review comments received in accordance with his/her local input methodology and in consultation with the MPOs and RPOs in the Division, appropriate NCDOT Transit Division (all modes) staff, and local aviation, rail and transit operators. **Through this evaluation and collaboration, the Division Engineer will determine the final local input point assignments per eligible regional impact and division needs project within their division and/or to projects in adjacent divisions to submit for final evaluation.** All final point assignments will be published using methods approved by the NCDOT Communications Office.

Ranking Process

Introduction:

The criteria outlined below will be used to create a ranking of projects in the regional impact and division needs categories that will be used by the Division Engineer in determining preliminary and final local input point assignments for projects within their division and/or to projects in adjacent divisions. **The Department's quantitative scores for projects and this ranking process will act as a guide and first step in determining a preliminary rank-ordered list of projects.**

Below is a standardized list of criteria available for use in developing a set of ranking criteria for each division. For each criterion, a detailed description is provided (including any pertinent information regarding data sets to be used). A standard set of ranking criteria has been provided to each Division Engineer for use in the regional impact and division needs ranking processes, and each Division Engineer will determine the combination of criteria that is most reflective of the needs and priorities for their respective area. In developing the

list of criteria for their division, the Division Engineer will select a minimum of four criteria from the standardized list and weight each such that the total possible points for a given project is equal to 100, subject to Secretary approval and Board review. Each Division Engineer will publish their specific set of criteria using methods approved by the NCDOT Communications Office prior to/in conjunction with posting preliminary point assignments for projects within their division and/or to projects in adjacent divisions.

Standard Criteria – Descriptions:

- **Existing Congestion:** a measure of the volume/capacity ratio of a facility or transit service taken from SPOT data.
- **Safety Score**: a calculation based on the crash frequency and severity along sections of a particular roadway. The safety score is the score generated in the quantitative scoring process and is calculated in accordance with the SPOT calculation detailed in Appendix B1 of this document.
- **Cost Effectiveness:** a calculation of the cost per vehicle to improve a road one mile. This calculation allows different types of roads to be compared based on how much it costs to improve the road per individual vehicle.
- **Freight Volume:** the number of trucks or equivalent vehicles that utilize the facility on a daily basis. Percentage of truck volume of average daily traffic converted to a number of trucks or equivalent.
- **Transportation Plan Consistency:** a yes or no question to determine if the proposed project is found in an existing adopted transportation plan for the area.
- **Corridor Continuity:** a measure of the project completing or continuing improvements on a defined transportation corridor.
- **Multimodal Accommodations:** a yes or no measure of the incorporation of pedestrian, bicycle or transit elements into a project.
- **Project Feasibility:** a qualitative measure of ROW, environmental justice and/or environmental problems on the project based on Transportation Planning Branch data or a completed feasibility study.
- **Public Support:** Strong public support for the project as documented through feedback received through public outreach efforts.
- **Serves Activity Center(s):** a yes or no measure of the project serving a large employment center, trauma center, institution of higher learning, tourist center or other high traffic facility/site.
- **Shoulder Width:** a measure of the existing paved shoulder width versus the DOT design standard.
- **Lane Width:** a measure of the existing lane width versus the DOT design standard
- **Airport Passenger Service:** a yes or no measure of the project materially improving an airport's ability to increase passenger service capacity.
- **Airport Safety:** a yes or no measure of the project improving safety at an airport.
- **Transit Expansion:** a yes or no measure of the project expanding passenger service on existing routes or opening new routes for increased service.

Regional Impact Ranking:

Certain highway, aviation, bicycle and pedestrian, ferry, transit, and rail projects are scored at the regional impact level, as well as any projects that cascade into the regional impact category from the statewide mobility category. Each Division Engineer will use the criteria and weighting below to generate a score for each project and a ranking of all projects in the regional impact category.

Below is a standard ranking of criteria eligible for use by each Division Engineer in evaluating projects in the regional impact category. Each Division Engineer will determine the combination of criteria (minimum of four) and criteria weights that best reflect the needs and priorities of their respective area. The resulting scores and rank order will be used by the Division Engineer in developing preliminary and final local input point assignments for projects within their division and/or to projects in adjacent divisions. The Department's quantitative scores for projects and this ranking process will act as a guide and first step in determining a preliminary rank-ordered list of projects. Each Division Engineer will use the preliminary rank-ordered list of projects along with local knowledge as well as information gathered through collaboration and consultation with MPOs, RPOs, local airport, rail and transit operators and input from other interested stakeholders to determine the actual assignment of qualitative points.

Regional Impact Standard Ranking – Criteria and Weights ***(Note: Choose minimum of four criteria and determine percent weights; total points for any given project cannot exceed 100)***					
Criteria	**0 Points**				
Existing Congestion **(% weight)**	Volume to capacity less than 0.5	Volume to capacity between 0.51 and 0.75	Volume to capacity between 0.76 and 0.9	Volume to capacity between 0.91 and 1.0	Volume to Capacity over 1.0
Safety Score **(% weight)**	SPOT safety points less than 30	SPOT safety points between 31-50	SPOT safety points between 51-65	SPOT safety points greater than 66	
Cost Effectiveness **(% weight)**	Cost per Vehicle/equivalent greater than $1500 per mile	Cost per Vehicle/equivalent between $1000-$1500 per mile	Cost per Vehicle/equivalent between $500-$999 per mile	Cost per Vehicle/equivalent less than $499 per Mile	
Freight Volume **(% weight)**	Less than 500 trucks/equivalent per day	Between 500-1000 trucks/equivalent per day	More than 1000 trucks/equivalent per day		
Transportation Plan Consistency **(% weight)**	Project is not in CTP of TP	Project is in CTP or TP			
Corridor Continuity **(% weight)**	Project does not complete of continue corridor improvement	Project does continue corridor improvement			
Multimodal Accom-modations **(% weight)**	Project does not include ped/bike/transit facilities	Project does include ped/bike/transit facilities			
Project Feasibility **(% weight)**	Significant ROW, EJ or environmental concerns	Minimal ROW, EJ or environmental concerns			
Public Support **(% weight)**	Minimal public support	Strong public support			
Serves Activity Center **(% weight)**	Serves employment centers of fewer than 500 employees, trauma centers, institutions of higher learning, or tourist centers	Project adds new capacity to serve employment centers of 500 to 1500 employees, trauma centers, institutions of higher learning	Project adds significant new capacity to serve employee centers with more than 1500 employees, trauma		

		or tourist centers	centers, institutions of higher learning or tourist centers		
Shoulder Width **(% weight)**	Project does not widen shoulder	Project widens shoulder to 50%> of DOT standard	Project widens shoulder to DOT standard		
Lane Width **(% weight)**	Project does not increase lane width	Project widens lane width to DOT standard			
Airport Passenger Service **(% weight)**	Project does not increase capacity	Project increases capacity			
Airport Safety **(% weight)**	Does not improve airport safety	Does improve airport safety			
Transit Expansion **(% weight)**	No service expansion	Expands service			

Division Needs Ranking:

Certain highway, aviation, bicycle and pedestrian, ferry, transit, and rail projects are scored at the division needs level, as well as any projects that cascade into the division needs category from the regional impact category. Each Division Engineer will use the criteria and weighting below to generate a score for each project and a ranking of all projects in the division needs category.

Below is a standard ranking of criteria eligible for use by each Division Engineer in evaluating projects in the division needs category. Each Division Engineer will determine the combination of criteria (minimum of four) and criteria weights that best reflect the needs and priorities of their respective area. The resulting scores and rank order will be used by the Division Engineer in developing preliminary and final local input point assignments for projects within their division and/or to projects in adjacent divisions. The Department's quantitative scores for projects and this ranking process will act as a guide and first step in determining a preliminary rank-ordered list of projects. Each Division Engineer will use the preliminary rank-ordered list of projects along with local knowledge as well as information gathered through collaboration and consultation with MPOs, RPOs, local airport, rail and transit operators and input from other interested stakeholders to determine the actual assignment of qualitative points.

Division Needs Standard Ranking – Criteria and Weights ***(Note: Choose minimum of four criteria and determine percent weights; total points for any given project cannot exceed 100)***					
Criteria	**0 Points**				
Existing Congestion **(% weight)**	Volume to capacity less than 0.5 (roads and rail), existing facilities available (other modes)	Volume to capacity between 0.51 and 0.75 (roads and rail), intermittent or incomplete facilities/transit available (other modes)	Volume to capacity over 0.75 (roads and rail), no facilities/transit available (other modes)		
Safety Score **(% weight)**	Spot safety points less than 30	Spot safety points between 31 and 50	Spot safety points between 51 and 65	Spot safety points between 66 and 80	Spot safety points greater than 80
Cost-Effectiveness **(% weight)**	Cost per daily user greater than $4,000 per user per unit per mile	Cost per daily user between $2,000-$4,000 per user per unit per mile	Cost per daily user between $1,500-$1,999 per user per unit per mile	Cost per daily user between $1,000-$1,499 per user per unit per mile	Cost per daily user less than $999 per user per unit per mile
Transportation Plan Consistency **(% weight)**	Project is not in adopted land use, transportation, transit or other plan	Project is in an adopted land use, transportation, transit or other plan			
Multimodal Accommodations **(% weight)**	Project does not include bike/ped/transit facilities	Project includes bike/ped/transit facilities			
Project Feasibility **(% weight)**	Significant ROW, EJ or environmental concerns	Minimal ROW, EJ or environmental concerns			
Public Support **(% weight)**	Minimal Public Support	Strong Public Support			
Serves Activity Center **(% weight)**	Serves employment centers of fewer than 500 employees, trauma centers, institutions of higher learning, or	Project adds new capacity to serve employment centers of 500 to 1500 employees, trauma centers, institutions of	Project adds significant new capacity to serve employee centers with more than 1500 employees, trauma		

	tourist centers	higher learning or tourist centers	centers, institutions of higher learning or tourist centers		
Shoulder Width **(% weight)**	Project does not widen shoulder	Project widens shoulder to 50%> of DOT standard	Project widens shoulder to DOT standard		
Lane Width **(% weight)**	Project does not increase lane width	Project widens lane width to DOT standard			
Airport Passenger Service **(% weight)**	Project does not increase capacity	Project increases capacity			
Airport Safety **(% weight)**	Does not improve airport safety	Does improve airport safety			
Transit Expansion **(% weight)**	No service expansion	Expands service			

Appendix B1

SAFETY SCORES FOR PRIORITIZATION 3.0

The calculation of safety scores varies depending on whether the project is located along a roadway segment or at an intersection:

Segments → (Crash Density x 33%) + (Severity Index x 33%) + (Critical Crash Rate x 33%)

Intersections → (Crash Frequency x 50%) + (Severity Index x 50%)

Safety scores for segment projects will be calculated automatically in the SPOT Online tool, based on a GIS safety score data layer provided by the Mobility and Safety Division. This layer contains the Crash Density, Severity Index, and Critical Crash Rate scores for all segments on state-maintained roadways (each safety component is scored using a 0-100 point scale). Scores are based on a 2010-2012 crash data.

Intersection safety scores will be calculated manually by the Mobility and Safety Division.

Definitions for each safety component are as follows:

- **Crash Density:** Number of reported crashes per mile.

- **Severity Index:** Locations with a high severity index have higher than average injury rates and/or more severe injuries. This index uses the reported "Crash Severity" data described below. NCDOT has established "Equivalent Property Damage Only" (EPDO) coefficients which are used to compare crash severity types among each other. One "B-injury" crash or "C-injury" crash is equivalent to 8.4 "PDO" crashes. One "K-injury" crash or "A-injury" crash is equivalent to 76.8 "PDO" crashes. The severity index of a location is equal to the total EPDO divided by the number of crashes.

  Crash Severity: Crash severity is reported based on the "KABCO" scale. The crash injury status is the most severe injury to a person involved in the crash.
  K-Fatal – A death results from injuries within 12 months after the crash.
  A-Disabling – Prevents the person from performing normal activities for at least one day.
  B- Evident – Obvious injury.
  C- Possible – No visible injury may have momentary loss of consciousness.
  O- Property Damage Only (PDO).

- **Critical Crash Rate:** A statistically derived number, which is often used a screening tool to identify locations where crash rates are higher than should be expected for a given facility type and where further engineering investigations may be considered. Crash Rate is defined for a section of highway as the number of crashes per 100 million vehicle miles travelled.

- **Crash Frequency:** The number of reported crashes during a given timeframe.

APPENDIX C

NCDOT STI Webpage

The Department has established a stand-alone website (accessible both by the public and its partners) to access STI information and resources. Along with ongoing outreach efforts by Department staff, the website is helping to educate local officials (government, system operators and staff) and the public about the types of transportation projects eligible for STI funding and how they will be scored and shared. The webpage includes STI eligible transportation maps, videos and presentations made at statewide summits and gives answers to frequently asked questions. More information can be found at the following link.

https://connect.ncdot.gov/projects/planning/Pages/ResourcesMPO-RPO.aspx